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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,646	12/02/2005	Glenn William Goodall	1063720050 (51097)	7269
39905 7590 04/16/2009 ROETZEL AND ANDRESS 222 SOUTH MAIN STREET AKRON, OH 44308				
EXAMINER				
MESH, GENNADIY				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,646

Applicant(s)

GOODALL ET AL.

Examiner

GENNADIY MESH

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 36-56 is/are pending in the application.
- 4a) Of the above claim(s) 36-45 and 47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46 and 48-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's Amendment filed on February 23, 2009 is acknowledged. Claims 1-35 are canceled. Claims 36 and 47 are withdrawn. Claims 46 and 48-56 are active. Claim 46 has been amended. While the prior art references in the following rejections are the ones used in the preceding Office Action, it is noted that the discussion of the references is set forth in a manner that appropriately addresses the limitations introduced by applicant's amendment to the claims.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 46, 48-49 and 53 - 55 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hamill (GB 1,039,540).

Hamill discloses coating composition (see page 2, lines 20 – 60) comprising (see page 2, lines 20 - 60) at least one polymer, for example styrenic (see page 2, lines 21-30), mixture of polysaccharides and proteins, including plant gum, vegetable proteins and reactive compounds as epoxy resins and **may not have any starches**, and for this reason satisfied limitation of Claim 46, because limitation " mixture contains **starch in an amount of less than 2 wt%**" satisfied by **0 wt% of starch or any amount of starch below 2wt%**.

Regarding Claim 55 Hamill discloses that coating is liquid, preferably in form of water based latex (see page 3,lines 65-88). Note, that polysaccharides and proteins can be bonded to latex particles by reactive compound (epoxy resin), thus forming outside shell on core of latex particle.

It is noted that claims 53 and 54 are in format of product-by-process claim. In accordance with the applicable to the treatment of product-by-process claims (MPEP 2113), the process limitations in claims 53 and 54 have no probative value absent evidence to the contrary.

In addition note, that case law holds that "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 46, 48 - 50 and 52 - 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamill in view of Doner et al.(US 6,147,206).

Discussion (see paragraph 2 above) with respect to Hamill incorporated herein by reference.

As stated above Hamill discloses coating composition including plant gum, but silent regarding source of plant gum.

However, Doner teach that high quality plant gum(comprising Hemicellulose B) is obtainable from corn fiber (see abstract). Doner further teach that corn fiber gum is highly soluble in water, colorless, lacks objectionable aroma and useful for variety of application, including film formation (see abstract).

Therefore, it would have been obvious to one of ordinary of skill at time of invention to use plant gum, obtained by method of Doner from corn fiber, due to it high solubility in water, colorless, odorless and film formation properties (see abstract) in composition disclosed by Hamill.

Regarding limitations of Claim 49, 50 and 54: Doner teach that protein can be present in plant gum due to stable linkage between hemicelluloses and proteins (see column 2, lines 50 – 56).

Regarding Claims 53 see Doner: abstract, Figure on Sheet 1, columns 4-8 and Examples.

4. Claims 46, 48 -50 and 52 - 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horley et al. (EP 0 949 307) in view of Doner et al.(US 6,147,206) combine with evidence given by Levine (US 2005/0148056).

Discussion with respect to Doner (see paragraph 2) incorporated herein by reference.

Horley discloses (see abstract) aqueous architectural coating composition (water based latex paint), comprising film –forming polymeric binder, wherein modified starch (including corn starch – see lines 24-29,page 3) grafted to chains of copolymerized ethylenically unsaturated monomers in the amount up to 50 wt.% (see claim 1).

Horley also discloses that instability of aqueous starch-containing polymeric binders can lead to phase separation and unpredictable increases of viscosities (see [0004]) , but can be resolve by subjecting starch to acid or enzymatic hydrolysis with following step of reacting with molecules comprising functional groups (see [005]).

Note, that during enzymatic hydrolysis starch will yield variety of soluble oligo- and mono- saccharides compositionally very similar to those found in corn gum, including xylose, mannose and arabinose (evidence can be found in Levine – see [0006] and [0072]).

Therefore, it would have been to one of ordinary of skill at the time of the invention to use corn gum obtained by method of Doner from corn fiber, due to it high solubility in water, colorless, odorless and film formation properties (see abstract) in composition disclosed by Horley in order to obtained stable aqueous based paint with out starch preparation step (as acid treatment or hydrolysis).

Regarding Claim 56 see Horley paragraph [0019].

5. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamill in view of Heitzman " Colorants".

Discussion (see paragraph 2 above) with respect to Hamill incorporated herein by reference.

Hamill discloses coating composition, comprising polymeric binder and pigments and/or fillers, specifically titanium dioxide (see page 3, lines 60 -66), but silent regarding Rutile form of Titanium dioxide.

However, Heitzman teach (see Colorants page 3, paragraph Titanium Dioxide) that:"

Titanium dioxide is the most common white of choice and by weight; it is actually the most widely used pigment. ... Its outstanding importance is due to its light scattering properties, its FDA approval, and excellent properties. ...Titanium dioxide is used in nearly all plastics to provide pastels and to adjust colors. The opacity is valued for ascetics and its ability to absorb UV radiation. **Rutile** titanium dioxide is the first choice for most plastic applications. **Anatase** titanium dioxide is less yellow, **not highly recommended for outdoor use**, blocks **less UV** radiation and is generally more reactive."

Therefore, it would have been to one of ordinary of skill use Rutile form of titanium dioxide per teaching of Heitzman in composition disclosed by Hamill due to higher stability and ability to absorb more UV radiation than Anatase form.

6. Claims 51 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamill in view of Miller et al. (US 2,822,341).

Discussion (see paragraph 3 above) with respect to Hamill incorporated herein by reference.

As it was discussed above Hamill discloses coating composition, comprising protein, but silent regarding amount of protein in composition.

However, Miller teach (see column 3, lines 7-25) that: " Most paint pigments are hydrophobic and require the presence of a dispersing agent for the production of a water dispersion of the pigments suitable for mixing with the latex. Many of the dispersing agents known to the colloid art can be utilized, including casein, soya bean protein and other animal and vegetable proteins (including albumens) capable of reacting with an alkaline material to become dispersible in water,... other water dispersible cellulose derivatives, as well as other hydrophilic colloids well known in the colloid art. Two or more dispersing agents can advantageously be used in a single paint. Typical paint pigments which are successfully incorporated with the polymer latex into a paint include titanium dioxide (the anatase or rutile grade is satisfactory), clay, silica , lithopone, mica, barium sulfate, talc and zinc sulfide." Regarding amount of protein in paint composition see lines 55-61.

Therefore, it would have been to one of ordinary of skill use vegetable protein (in amount claimed by Applicant) as pigment dispersing agent per teaching of Miller in paint coating composition disclosed by Hamill with reasonable expectation of success. I

Response to Arguments

7. Applicant's arguments filed February 23, 2009 have been fully considered but they are not persuasive.

7.1. Applicant's arguments related to Claims 46, 48-49 and 53 - 55 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hamill (GB 1,039,540) based on statement that reference does not teach " that (binder) mixture contains less than 2% starch ".

However, as it was stated in rejection, composition of Hamill does not require presence starch at all and for this reason satisfied limitation of Claim 46 (f) as it explained in rejection above- see paragraph 2.

For this reason, Applicant's arguments were found unpersuasive.

7.2. Note, that rest of Applicant's arguments based on alleged deficiency of Hamill, which was rebutted above - see paragraph 7.1. For this reason all Applicant's arguments are not persuasive.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GENNADIY MESH whose telephone number is (571)272-2901. The examiner can normally be reached on 10 a.m - 6 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272 1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
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/GM/

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